

Ball and Socket Joint (with 3/4" ball bearing)

:a joint in which a ball moves within a socket so as to allow rotary motion in every direction within certain limits

ID=Inside Diameter OD=Outside Diameter WT=Wall Thickness

1. Disc
 - a. Cut out a 20g disc with a 28.58mm diameter (can be found on a standard circle template).
 - b. Dap the disc until you are using a dapping punch the same diameter as your pre bought ball bearing (.75" or 3/4" or 19.1mm). Most dapping sets have this size
 - i. This will give you a half dome with a height that a little over half its diameter.
 - c. Sand the dome flat until height is exactly half of diameter, creating a perfect half dome.
 - i. Height: 10.45mm
 - ii. Diameter: 20.9mm
2. Ring/Collet
 - a. Take a piece of 20g sheet and cut a strip 2.5mm x 60mm*
 - i. When making a band ring (ID 19.1 = Size 9) (Size 9 with 20g metal = 61.6 material length)
 - ii. I rounded down from 61.6 to 60 because I can stretch the ring/collet until it fits perfectly over the ball bearing once its soldered.
 - b. Solder ring together like you would a typical band ring (hard solder).
 - c. Sand ring on both sides until smooth. Then stretch until it just slides over .75" ball bearing.
 - i. At this point the OD of the ring and OD of the half dome should be almost exactly the same.
 - d. Solder ring/collet centered onto half dome (medium solder).
3. Rods/Wire
 - a. Cut two pieces of thick gauge wire, file ends flush and solder to center of half dome and .75" ball bearing.
4. Setting the ball bearing
 - a. Insert ball bearing into half dome with attached collet
 - b. Set the ball bearing like you would a thick bezel setting. I use a hammer and a swage block

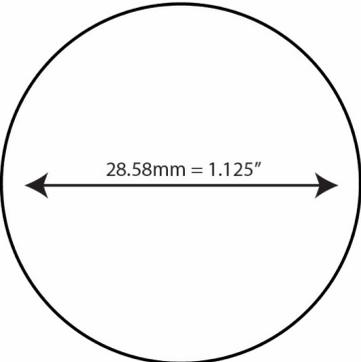
Double Pendulum Style Earrings

:an object hung from a fixed point so that it can swing freely backward and forward

1. Tube & Wire
 - a. Use thick wall tubing that is slightly larger than wire/rod that will be inserted through it.
 - i. Tube will be used to create knuckles
 - b. Tube: OD 2mm ID 1mm WT .5
 - c. Wire/rod: 20g wire .8mm
2. Pendulum
 - a. Decide how many pendulum elements you want to swing from the pivot point. For this example, I will use 2.
3. Knuckles
 - a. Figure out how many knuckles (made from tubing) you will need for your objects to swing. For these two objects I use 3 knuckles. 2 knuckles for one object and 1 knuckle for the other.
 - b. The combined length of knuckles should run almost the entire length of your design minus 1mm to allow for movement. The knuckle length can vary, but I like to keep my knuckles the same length.
 - i. Knuckle size: 5mm
 - ii. Earring width: 16mm
 - iii. Extra space for movement: 1mm
 - c. Solder 20g wire to one side of earring.
4. Connecting parts
 - a. Solder knuckles to appropriate parts.
 - b. Use a piece of .7 or .9 pencil lead or pin stem wire (.8mm) to keep knuckles straight.
 - c. Use single knuckle to keep the spacing correct on other two knuckles.
 - d. Slide on three knuckles and attached material onto 20g wire and solder two contacting points. This will lock everything in place.

Ball and Socket Joint

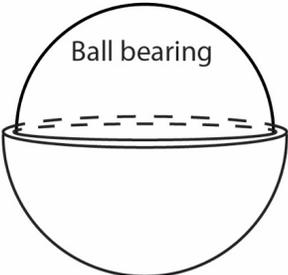
1a.



1b.



1c.



2a.

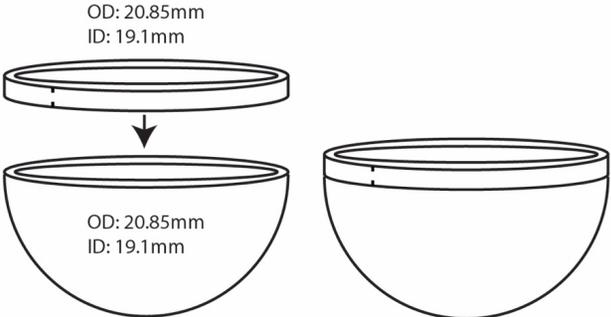


2.5 x 60 x .8mm

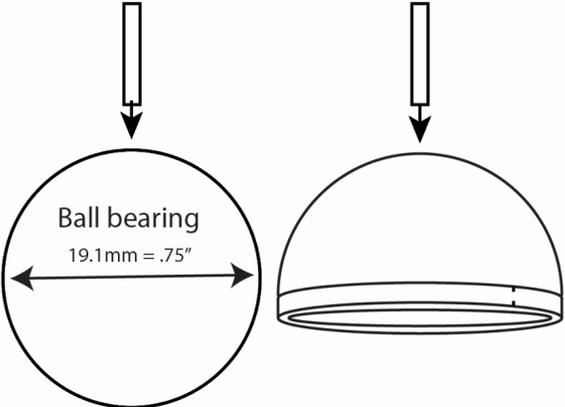
2b. 2c.



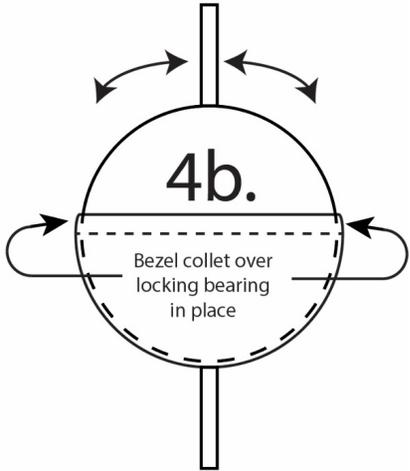
2d.



3a.



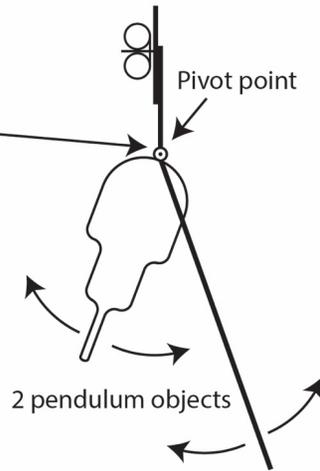
4a.



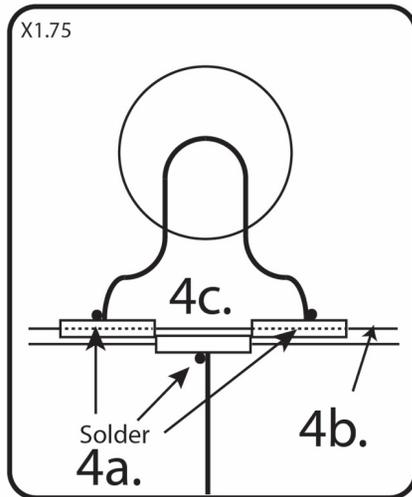
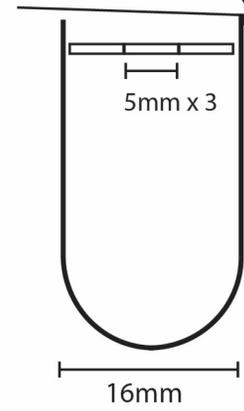
1a.



2a.



3a. 3b. 3c.



4d.

